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WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

December 20, 2011

TO: Internal File

THRU: Steve Christensen, Permit Supervisor SJC

FROM: Amanda Daniels, Environmental Scientist AD

RE: 2011 Second Quarter Water Monitoring, UtahAmerican Energy Inc., Horse Canyon Complex, C/007/0013, WQ11-2, Task ID #3842

This report was prepared from monitoring data queried from the UDOGM database. The data that support this report were collected and submitted to the database by UtahAmerican Energy Inc. (UEI). The data were downloaded into file O:\007013.HOR\WaterQuality\Spreadsheets\HorseCanyonWQ.xls for this review.

Geneva Mine

Mining at the Geneva Mine ceased in 1982 and the mine is undergoing final reclamation. The Permit for the Geneva Mine (Horse Canyon Mine, MRP-A) was most recently re-issued on May 18, 2007. UEI received Phase III bond release at the Geneva Mine Permit on November 30, 2009 for all but 0.49 acres of disturbed area associated with Ditch 31. Surface water monitoring is required for the Geneva Mine under the Reclamation Plan (MRP-A). The Division previously found that all but one monitoring site were not necessary because they no longer provide pertinent resource information for mining effects or influence. Surface water monitoring site B-1, located on Horse Canyon Creek downstream of the mine, will be monitored until the liability period for Ditch 31 is complete.

Lila Canyon Mine

UEI received permit approval for the Lila Canyon Mine on May 18, 2007 with special conditions attached. The Conditions were clarified on August 3, 2007. Operational water monitoring is described in Section 731.200 and monitoring sites are listed in Table 7-3 of the Lila Canyon MRP. Table 7-4 and Table 7-5 list the monitoring parameters for surface water and groundwater, respectively, and Plate 7-4 shows the water monitoring sites. The list of parameters for baseline, operational and post-mining water monitoring are the same.

1. Were data submitted for all required sites?

Springs YES [X] NO [ ]

No springs are monitored at the Geneva Mine. Operational monitoring for Lila Canyon includes quarterly monitoring at springs L-7-G, L-8-G, L-9-G, L-11-G, L-12-G, L-16-G and L-17-G. Following a spring reconnaissance with the Division of Water Rights and grazing permittees, UEI agreed to begin monitoring Quaker Spring. Quaker Spring was identified as spring location "3C" during the spring reconnaissance performed by the Permittee during 1994 and 1995.

All springs were monitored according to the schedule and the data were submitted. Springs 3C, L-11-G, L-7-G, L-8-G, and L-9-G reported flows ranging from 1.25 gpm to 2.5 gpm. Spring L-12-G, L-16-G, and L-17-G reported no flow.

Streams YES [X] NO [ ]

Surface water (stream) sites are monitored quarterly. Surface water site B-1 is the only surface water-monitoring site monitored at the Geneva Mine. Sites L-1-S, L-2-S, L-3-S, L-13-S, L-14-S, L-18-S, and L-19-S are identified for surface water monitoring for the Lila Canyon Mine.

All required stream sites were monitored for the quarter. All streams reported no flow for the second quarter 2011.

Wells YES [X] NO [ ]

There are no active wells at the Geneva Mine. Three piezometers are monitored for water level only for the Lila Canyon Mine permit: IPA-1, IPA-2 and IPA-3.

The required groundwater wells were reported as ranging in depth from 839.7 feet to 103.35 feet.

UPDES YES [X] NO [ ]

There is not an active UPDES permit for the Geneva Mine. Discharges from the Lila Canyon Mine are authorized under UPDES General Permit No. UTG040000 as application number UTG040024. The Lila Canyon Mine UPDES permit identifies two discharges: 001 is discharge from the sediment pond and 002 is discharge from the underground mine. These discharges are being monitored as sites L-4-S and L-5-G, respectively. The UPDES permit specifies monitoring frequency and required parameters. The underground mine and sediment pond are constructed but not discharging.

Required monthly monitoring data were reported for the second quarter 2011.

2. Were all required parameters reported for each site?

Springs **YES [X] NO [ ]**

Streams **YES [X] NO [ ]**

Wells **YES [X] NO [ ]**

UPDES **YES [X] NO [ ]**

3. Were irregularities found in the data?

Springs **YES [X] NO [ ]**

Spring L-7-G recorded a D-Na level of 78.8 mg/l. This is 2.6 standard deviations from the mean of 69.5 mg/l. Spring L-8-G recorded a D-Mg of 6.2 mg/l, this is 2.84 standard deviations from the mean of 61.13 mg/l. The same spring also recorded a D-Na level of 66.85 mg/l , which is 2.41 standard deviations from the mean of 61.13 mg/l. Due to the variable history of these values at this site, these levels are not concerning for now.

Streams **YES [ ] NO [X]**

Wells **YES [ ] NO [X]**

UPDES **YES [ ] NO [X]**

4. On what date does the MRP require a five-year resampling of baseline water data.

Re-sampling for baseline parameters is due preceding permit renewal. Analysis of baseline water samples is conducted according to the operational monitoring plan, therefore no additional parameters are required for baseline monitoring.

5. Based on your review, what further actions, if any, do you recommend?

None.

6. Follow-up from last quarter, if necessary.

None

Did the Mine Operator submit all the missing and/or irregular data (datum)?

Not applicable

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